ABSTRACT OF THE DISCLOSURE

An object of the present invention is to facilitate positioning of a metal member for mounting a high-frequency diode and of a dielectric strip, thereby remarkably improving control of oscillation characteristics and workability in production. The invention provides a Gunn diode oscillator comprising, between parallel plate conductors disposed at an interval equal to or less than one half of wavelength $\lambda$ of high-frequency signals, a metal member provided with a Gunn diode device which oscillates high-frequency signals, a choke-type bias supply strip which is made by alternately forming wide strips and narrow strips and which supplies a bias voltage to the Gunn diode device, and a strip conductor which linearly connects the choke-type bias supply strip and the Gunn diode device, and further comprising, in the vicinity of the Gunn diode device, a dielectric strip which is disposed in the vicinity of the Gunn diode device and which receives and propagates high-frequency signals, wherein the cycles of the wide strips and narrow strips of the choke-type bias supply strip are set to approximately $\lambda/4$, respectively, and the length of the strip conductor is set to approximately $\{(3/4) + n\}\lambda$ (n is an integer of 0 or more).